

CLAIMS

What is claimed is:

1. A mobile electronic device network employing provisioning techniques for updating electronic devices, the network comprising:

a device server capable of dispensing at least one update;

an electronic device having at least one of firmware and software, the electronic device being communicatively coupled to the device server; and

an update service in the electronic device, presence of the update service in the electronic device being determinable by the network, wherein when enabled the update service indicates to the network capability of the electronic device to update at least one of firmware and software, electronic device employing the at least one update to update the at least one of firmware and software.

2. The network according to claim 1, wherein the device server is adapted to store and dispense a plurality of updates, wherein the at least one update dispensed to the electronic device is selected from the plurality of updates based upon characteristics of the electronic device communicated to the device server.

3. The network according to claim 2, further comprising:

number assignment module (NAM) parameters provisioned in the electronic device by the network, wherein the network is capable of administering the NAM parameters in the electronic device; and

scheduling software for at least one update of one of firmware and software in the electronic device during administration of the NAM parameters by the network.

4. The network according to claim 3, wherein the network is capable of determining whether the electronic device supports an over-the-air provisioning function, and wherein the electronic device is capable of executing the over-the-air provisioning function, and wherein the over-the-air provisioning function comprises one of a firmware update function and a software update function in the electronic device.

5. The network according to claim 4, wherein one of the firmware update function and the software update function in the electronic device is invoked based upon one of a firmware update service option and a software update service option provided in the electronic device.

6. The network according to claim 5, further comprising:
an update agent in the electronic device; and
a network server determining a service option and for permitting the electronic device to initiate over-the-air access to one of the firmware update service option and the software update service option in the electronic device, wherein the network is adapted to employ the means for determining a service option to determine one of an enabled firmware update service option and an enabled software update service option in the electronic device and the network is adapted to invoke the update agent while initializing a number assignment module in the electronic device.

7. The network according to claim 6, wherein one of the firmware update service option and the software update service option in the electronic device is adapted to be set by the network without user intervention, and wherein the at least one update selected from the plurality of updates is disseminated to the electronic device, and wherein the update agent is invoked in the electronic device for updating one of firmware and software employing the at least one updates.

8. The network according to claim 7, further comprising:
over-the-air delivery of the at least one update to the electronic device from a delivery server after determining that one of the firmware update service option and the software update service option in the electronic device is set.

9. The network according to claim 4, further comprising:

one of a firmware update service function and a software update service function in the electronic device; and

a network server for facilitating network-initiated over-the-air access to one of the firmware update service option and the software update service option in the electronic device, wherein the network initializes the number assignment module in the electronic device and, after determining that one of the firmware update service option and the software update service option in the electronic device is enabled, initiating download of at least one update and updating one of the firmware and software of the electronic device.

10. The network according to claim 1, wherein the electronic device comprises at least one of a plurality of mobile electronic devices, and wherein the plurality of mobile electronic devices comprise at least one of a mobile cellular phone handset, personal digital assistant, pager, MP3 player, and a digital camera.

11. A mobile electronic device network adapted to update electronic devices and perform over-the-air number assignment module parameter provisioning, the network comprising:

an electronic device comprising one of firmware and software, the electronic device also comprising number assignment module parameters, the electronic device being communicatively coupled to at least one server; and

at least one of a firmware update service option and a software update service option in the electronic device determinable by the network, wherein when enabled, the at least one of a firmware update service option and a software update service option indicates to the network that the electronic device is capable of updating one of firmware and software, wherein the electronic device is adapted to communicate one of the firmware update service option and software update service option to the network, and wherein the electronic device is also adapted to communicate device specifications to the network when the network attempts to provision the number assignment module parameters.

12. The network according to claim 11, wherein the at least one server dispenses at least one of a plurality of updates to the electronic device based upon one of the firmware update service option and the software update service option and device specifications communicated to the at least one server by the electronic device.

13. The network according to claim 11, wherein the network is adapted to manage updating at least one of firmware and software based upon one of a firmware update service option and a software update service option in the electronic device determinable by an over-the-air provisioning function in the network.

14. The network according to claim 13, wherein the network is adapted to determine a state of one of the firmware update service option and the software update service option in the electronic device and provision a universal resource locator in the electronic device for at least one server in the network, wherein the at least server is employed to download updates to the electronic device.

15. The method according to claim 11, wherein the electronic device comprises at least one of a plurality of mobile electronic devices, and wherein the plurality of mobile electronic devices comprise at least one of a mobile cellular phone handset, personal digital assistant, pager, MP3 player, and a digital camera.

16. A method of updating software in a wireless communication device in a wireless network, the method comprising:

determining a value of one of a firmware update service option and a software update service option in the wireless communication device by the wireless network; and

downloading an update from a server in the wireless network if one of the firmware update service option and the software update service option is determined to have a predetermined value.

17. The method according to claim 16, wherein determining is performed during an over-the-air parameter administration operation for programming number assignment module parameters.

18. The method according to claim 17, wherein the over-the-air parameter administration operation comprises:

paging one of a firmware update service option number and a software update service option number in the wireless communication device;

verifying an identity of the wireless communication device using at least one authentication process; and

responding to the paging, if the wireless communication device is capable of supporting the over-the-air parameter administration operation.

19. The method according to claim 18, wherein responding to the paging further comprises:

indicating support for one of the firmware update service option and the software update service option by sending one of a firmware update service option number and a software update service option number, if the wireless communication device supports one of the firmware update service option and the software update service option; and

indicating lack of support for one of the firmware update service option and the software update service option, if the wireless communication device does not support one of the firmware update service option and the software update service option.

20. The method according to claim 16, wherein downloading comprises:

setting a flag in the wireless communication device indicating availability of an update package for updating the wireless communication device during an over-the-air parameter administration operation changing number assignment module parameters;

sending a universal resource locator identifying at least one server to the wireless communication device during an over-the-air parameter administration operation changing number assignment module parameters; and

retrieving update information from the at least one server based upon the flag.

21. The method according to claim 16, wherein determining comprises:

receiving a general page message indicating one of a firmware update service option and a software update service option by the wireless communication device;

verifying support of one of the firmware update service option and the software update service option by the wireless communication device; and

sending a response to a base station indicating support of one of firmware and software updates when the wireless communication device verifies support of one of the firmware update service option and the software update service option.

22. The method according to claim 21, wherein verifying further comprises:
paging the wireless communication device for one of a firmware update service option number and a software update service option number;
comparing one of the firmware update service option number and the software update service option number received on one of a stored firmware update service option number and a stored software update service option number in the wireless communication device, to determine a match by the wireless communication device;
responding to the paging, if a match occurs, wherein responding to the paging comprises indicating that the wireless communication device is associated with one of the firmware update service option number and the software update service option number;
and
responding to the paging indicating a negative match if a match does not occur.

23. The method according to claim 16, wherein the electronic device comprises at least one of a plurality of mobile electronic devices, and wherein the plurality of mobile electronic devices comprise at least one of a mobile cellular phone handset, personal digital assistant, pager, MP3 player, and a digital camera.